

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

North Carolina Agricultural Research Service

**Whereas, THERE HAS BEEN PRESENTED TO THE
Secretary of Agriculture**

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *seventeen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXHIBIT TO OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS SPECIFIED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

OAT

'Brooks'

*In Testimony Whereof, I have hereunto set
my hand and caused the seal of the Plant
Variety Protection Office to be affixed
at the City of Washington
this 26th day of June in
the year of our Lord one thousand nine
hundred and eighty.*



Attest:

Samuel L. ...
Commissioner
Plant Variety Protection Office
Washington, D.C.

[Signature]

UNITED STATES DEPARTMENT OF AGRICULTURE
 AGRICULTURAL MARKETING SERVICE
 LIVESTOCK, POULTRY, GRAIN & SEED DIVISION

FORM APPROVED
 OMB NO. 40-R3822

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

No certificate for plant variety protection may be issued unless a completed application form has been received (5 U.S.C. 553).

INSTRUCTIONS: See Reverse.

1a. TEMPORARY DESIGNATION OF VARIETY N. C. 73-15		1b. VARIETY NAME Brooks		FOR OFFICIAL USE ONLY	
				PV NUMBER 7900090	
2. KIND NAME Oats		3. GENUS AND SPECIES NAME Avena sativa		FILING DATE 7-13-79	TIME 10:00 A.M.
4. FAMILY NAME (BOTANICAL) Gramineae		5. DATE OF DETERMINATION 9/20/79 9-20-78		FEE RECEIVED \$ 500.00 \$ 250.00	DATE 7-13-79 5-12-80
6. NAME OF APPLICANT(S) North Carolina Agricultural Research Service		7. ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code) North Carolina State University School of Agriculture & Life Sciences Box 5847, Raleigh, N. C. 27650		8. TELEPHONE AREA CODE AND NUMBER (919) 737-2718	
9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: (Corporation, partnership, association, etc.) Public Institution			10. IF INCORPORATED, GIVE STATE AND DATE OF INCORPORATION N/A		11. DATE OF INCORPORATION N/A
12. NAME AND MAILING ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS: Mr. R. W. McMillen, Manager N. C. Foundation Seed Producers, Inc. P. O. Box 5687, State University Station, Raleigh, N. C. 27650					

13. CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED:

13A. Exhibit A, Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.)

13B. Exhibit B, Novelty Statement.

13C. Exhibit C, Objective Description of the Variety (Request form from Plant Variety Protection Office.)

13D. Exhibit D, Additional Description of the Variety.

14a. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See Section 83(a). (If "Yes," answer 14B and 14C below.) YES NO

14b. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? YES NO

14c. IF "YES," TO 14B, HOW MANY GENERATIONS OF PRODUCTION BEYOND BREEDER SEED? FOUNDATION REGISTERED CERTIFIED

15a. DID THE APPLICANT(S) FILE FOR PROTECTION OF THIS VARIETY IN OTHER COUNTRIES? YES NO (If "Yes," give name of countries and dates.)

15b. HAVE RIGHTS BEEN GRANTED THIS VARIETY IN OTHER COUNTRIES? YES NO (If "Yes," give name of countries and dates.)

16. DOES THE APPLICANT(S) AGREE TO THE PUBLICATION OF HIS/HER (THEIR) NAME(S) AND ADDRESS IN THE OFFICIAL JOURNAL? YES NO

17. The applicant(s) declare(s) that a viable sample of basic seed of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

5/29/79
 (DATE)

Kenneth R. Keller, Director
 (SIGNATURE OF APPLICANT)

INSTRUCTIONS

GENERAL: Send an original copy of the application and exhibits, at least 2,500 viable seeds, and \$500 fee (\$250 filing fee and \$250 examination fee) to U.S. Dept. of Agriculture, Agricultural Marketing Service, Livestock, Poultry, Grain and Seed Division, Plant Variety Protection Office, National Agricultural Library Building, Beltsville, Maryland 20705. (See section 180.175 of the Regulations and Rules of Practice.) Retain one copy for your files. All items on the face of the form are self-explanatory unless noted below.

ITEM

- 5 Give the date the applicant determined that he had a new variety based on (1) the definition in section 41(a) of the Act and (2) the date a decision was made to increase the seed.
- 13a Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method; (2) the details of subsequent stages of selection and multiplication; (3) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified and (4) evidence of uniformity and stability.
- 13b Give a summary statement of the variety's novelty. Clearly state how this novel variety may be distinguished from all other varieties in the same crop. If the new variety most closely resembles one or a group of related varieties: (1) identify these varieties and state all differences objectively; (2) attach statistical data for characters expressed numerically and demonstrate that these differences are significant; and (3) submit, if helpful, seed and plant specimens or photographs of seed and plant comparisons clearly indicating novelty.
- 13c Fill in the Exhibit C, Objective Description form, for all characteristics for which you have adequate data.
- 13d Describe any additional characteristics that are not described, or whose description cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the description of characteristics that are difficult to describe, such as, plant habit, plant color, disease resistance, etc.
- 14a If "YES" is specified (seed of this variety be sold by variety name only as a class of certified seed) the applicant may NOT reverse his affirmative decision after the variety has either been sold and so labeled, his decision published, or the certificate has been issued. However, if the applicant specified "NO," he may change his choice. (See section 180.16 of the Regulations and Rules of Practice.)
- 15a See section 42 of the Plant Variety Protection Act and section 180.7 of the Regulations and Rules of Practice.

EXHIBIT A

Brooks Oats

The oat line proposed for release under the name, "Brooks", was tested as N.C. 73-15 and is listed in the World Oat Collection as C.I. 9260. It was derived from the cross: Co x Fgn 4 x Fgn^{3X}_A Cmr x Hj-Jt 2 x Atlt x Ctn-SF.¹ The last cross was made in 1967 with the final selection (F₇) having been made in 1973.

N.C. 73-15 has been tested at the Piedmont Research Station (Rowan Co.) and the Central Crops Research Station (Clayton, N.C.) for four years. It was tested in the 1977 and 1978 Official Variety Tests and the 1977 and 1978 Uniform Central Area Winter Oat Nurseries (in Alabama, Arkansas, Georgia, North Carolina, South Carolina, Texas and Virginia). Results from these tests are attached (Table 1-6).

This oat line is quite impressive. It has compiled an excellent yield record, having yielded 19% more than Salem and 3% more than Coker 227 in 23 state and regional tests grown from 1975 through 1978. It exceeds both Carolee and Salem in test weight and winter hardiness and is quite early in maturity. The additional winter hardiness should be appealing to piedmont farmers, whose oat crops were badly damaged during the last two severe winters. It also has tolerance to barley yellow dwarf virus, our most serious oat disease, and moderate resistance to soil-borne mosaic virus, which is a serious problem in the piedmont.

N.C. 73-15 also offers a new level of overall protein production from oats. Protein production data (Table 3) from Rowan Co. in 1975 and 1976 indicate at least a 25% advantage in lbs. of protein per acre over other commonly grown varieties. Protein samples were not submitted in 1977 because so many entries were severely damaged by winter killing and Clayton samples were not submitted

1 (Carolee x Fulgrain) x Fulgrain [(Cimmaron x Haijara - Joannette) x (Atlantic x Clintoni-Santa Fe)]
 9/20/74

7900090

in 1975 or 1976 due to sub-normal conditions resulting from soil problems. It is hoped that 1978 results will be available by the time the Breeders Release Board meets and it is anticipated (based upon yields and goat percentage already available) that this record of high protein production will continue. The potential for total protein production from this variety in a double cropping system with soybeans is very great.

The name Brooks is suggested to honor former Dean of Agriculture and Life Sciences H. Brooks James. The name is short and should be easily recognizable. Mr. McMillen has increased approximately 1100 bushels of "Brooks". This increase will make seed sales to Certified growers possible before the 1978 fall planting.

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THE NORTH CAROLINA AGRICULTURAL EXPERIMENT STATION

RALEIGH, NC 27650

NOTICE OF NAMING AND RELEASE OF BROOKS OAT

The North Carolina Agricultural Experiment Station announces the development and naming of a new oat cultivar, Brooks.

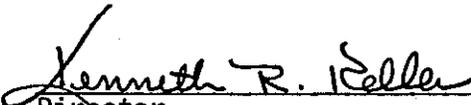
Brooks, C.I 9260, is a high yielding, stiff-strawed winter oat with excellent winterhardiness (43% greater than 'Carolee'), early maturity and exceptional potential for protein production. It has shown at least a 25% advantage in pounds of protein per acre over other commonly grown varieties.

Brooks is a pure line selection from the cross Co x Fgn 4x Fgn 3x Cmr x Hj-Jt 2x Atlt x Ctn-SF. The last cross was made in 1967, with the final selection (F₇) having been made in 1973. It was tested, as NC 73-15, by the North Carolina Agricultural Experiment Station from 1975-78. It was also tested from 1977-78 in the North Carolina Official Variety Test and the Uniform Central Area Winter Oat Nursery.

Brooks has some tolerance to barley yellow dwarf virus and moderate resistance to soil-borne mosaic virus.

Breeders seed will be maintained by the North Carolina Agricultural Experiment Station. Foundation seed are being produced by the North Carolina Foundation Seed Producers, Inc.

Suggested date for press release on Brooks oats is October 1, 1978.



Director
North Carolina Agricultural Experiment Station
Raleigh, NC 27650

9/20/78
Date

7900090

EXHIBIT A - BROOKS OAT

(Supplement)

Stability Statement

The variety is uniform and stable. No variants have been observed.

EXHIBIT B - BROOKS OAT

<u>Characteristics</u>	<u>Salem</u>	<u>Brooks</u>
Internodes	Glabrous	Pubescent
Leaf Sheath	Glabrous	Pubescent
Spikelet Separation	Fracture	Discarticulation <i>Semiabscission 9/20/79</i>
Lemma Color	Red	Yellow
Lemma Length	Short	Very Short 8-12 mm. <i>9/20/79</i>
Length of Second Floret Rachilla Segment	Medium	Long
Awns	Common	Few or Absent

We don't know of any variety "most similar" to Brooks, but we believe 'Salem' is as similar as exists.

U.S. DEPARTMENT OF AGRICULTURE
 AGRICULTURAL MARKETING SERVICE
 GRAIN DIVISION
 HYATTSVILLE, MARYLAND 20782

EXHIBIT C
 (Oat)

OBJECTIVE DESCRIPTION OF VARIETY

OAT
 (Avena spp.)

NAME OF APPLICANT(S) North Carolina Agricultural Research Service VARIETY NAME OR TEMPORARY DESIGNATION Brooks

ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code)
North Carolina State University
School of Agriculture and Life Sciences
Box 5847, Raleigh, North Carolina 27650

FOR OFFICIAL USE ONLY

PVPO NUMBER

7900090

Place the appropriate number that describes the varietal character of this variety in the boxes below.
 Place a zero in first box (e.g. or) when number is either 99 or less.

1. SPECIES:

1

1 = SATIVA

2 = BYZANTINA

3 = OTHER (Specify) _____

2. GROWTH HABIT:

1

1 = WINTER

2 = SEMIWINTER

3 = SPRING

2

JUVENILE GROWTH:

1 = PROSTRATE

2 = SEMIPROSTRATE

3 = ERECT

STANDARD VARIETIES

1 = JAYCEE

2 = CLINTLAND 64

3 = CAYUSE

4 = NORLINE

5 = YANCEY

6 = FLORIDA 501

3. MATURITY (50% flowering): Not Applicable

DAYS EARLIER THAN

STANDARD VARIETY

DAYS LATER THAN

STANDARD VARIETY

2

Season: 4/21/71

1 = VERY EARLY (Jaycee)

2 = EARLY (Nodaway 70)

3 = MIDSEASON (Clintford)

4 = LATE (Lodi)

5 = VERY LATE (Garry)

6 = EXTREMELY LATE (Mackinaw)

4. PLANT HEIGHT (From soil level to top of head):

Not Applicable

CM. TALL

CM. SHORTER THAN

STANDARD VARIETY

CM. TALLER THAN

STANDARD VARIETY

5. STEM:

2

DIAMETER:

1 = FINE (Kherson)

2 = MEDIUM (Clintford)

3 = COARSE (Nodaway 70)

1

HAIRINESS AT UPPER CULM NODES:

1 = HAIRLESS

2 = HAIRY

1

MATURE STEM COLOR:

1 = YELLOW

2 = REDDISH

6. LEAF: (Leaf Color: The Royal Horticultural Society's or any recognized color chart should be used to determine the leaf color of the described variety.)

CARRIAGE:

1 = DROOPING (Random)

2 = ERECT (Walken)

COLOR:

1 = YELLOW GREEN

2 = LT. GREEN

3 = DK. GREEN

4 = BLUE GREEN

MM. WIDTH (First leaf below flag leaf) medium 4/22/80

1

LEAF MARGIN:

1 = GLABROUS

2 = CILIATE

2

LIGULE:

1 = ABSENT

2 = PRESENT

1

LEAF SHEATH:

1 = HAIRLESS

2 = HAIRY

7. HEAD:

1

PANICLE SHAPE:

1 = EQUILATERAL

2 = INTERMEDIATE

3 = SIDE PANICLE (Unilateral)

ATTACHMENT OF LOWER WHORL OF BRANCHES:

1 = FIRST NODE

2 = SECOND NODE (False node)

2

PANICLE SIZE:

1 = SMALL (Yancey)

2 = MEDIUM (Walken)

3 = LARGE (Markton)

2

PANICLE WIDTH:

1 = NARROW (Gopher)

2 = MIDBROAD (Yancey)

3 = BROAD (Nodaway 70)

CM. PANICLE LENGTH

NUMBER OF BRANCHES

NUMBER OF WHORLS OF BRANCHES

1

POSITION OF BRANCHES:

1 = ASCENDING (Yancey)

2 = SPREADING (Cayuse)

3 = DROOPING (Markton)

4 = PECTINATE (White Tartar)

5 = CONFUSED (Storm King)

504080

7

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8. RACHIS:

2 1 = RECURVED (Yancey) 3 0 MM. SECOND FLORET RACHILLA SEGMENT LENGTH

1 SECOND FLORET RACHILLA SEGMENT: 1 HAIRLESS 2 HAIRY

1 RACHILLA HAIRS: 1 SHORT 2 LONG

9. SPIKELET:

2 SPIKELET SEPARATION BY: 1 ABSCISSION 2 SEMIABSCISSION 3 FRACTURE

1 FLORET SEPARATION BY: 1 DISARTICULATION 2 HETEROFRACTURE 3 BASIFRACTURE

1 FLORETS PER SPIKELET (mean no.)

10. GLUMES: (Glume Color: The Royal Horticultural Society's or any recognized color chart should be used to determine the color of the described variety.)

0 6 MM. WIDTH 2 2 MM. LENGTH 0 7 NO. OF VEINS ON GLUMES 2 COLOR: 1 WHITE 2 YELLOW 3 RED 4 STRIPED

4/22/80 - letter of 4/1/80

11. LEMMA: (Lemma Color: The Royal Horticultural Society's or any recognized color chart should be used to determine the color of the described variety.)

1 0 MM. LENGTH 2 COLOR: 1 WHITE 2 YELLOW 3 RED 4 GRAY 5 BLACK

1 HAIRINESS OF DORSAL SURFACE: 1 HAIRLESS 2 HAIRY

12. AWN (First floret):

1 OCCURENCE: 1 ABSENT (Walken) 2 TWISTED 3 TWISTED GENICULATE

2 INFREQUENT (Yancey) 3 COMMON (Chilocco) 4 FREQUENT (Random)

1 MM. AWN LENGTH

13. SEED:

4/22/80

2 FLORESCENCE UNDER ULTRAVIOLET LIGHT: 1 FLORESCENT 2 NON-FLORESCENT

2 BASAL HAIR: 1 ABSENT (Florida 501) 2 ABSENT TO FEW (Yancey) 3 FEW TO SEVERAL (Lee) 4 SEVERAL TO NUMEROUS (Florilee) 5 NUMEROUS (Red Rustproof)

2 5 0 MM. BASAL HAIR LENGTH 2 0 4 MG. GROAT WEIGHT (each)

2 0 4 GMS. PER 1,000 SEEDS 2 0 4 % GROAT PROTEIN 2 0 4 % GROAT OIL

14. INSECTS: (0 = NOT TESTED, 1 = SUSCEPTIBLE, 2 = RESISTANT)

0 CEREAL LEAF BEETLE 0 BLUEGRASS BILLBUG 0 GRAIN BUG (C. Sayi) 0 NEMATODE (Type)

0 GREEN BUG (Biotype) 0 OTHER (Specify)

15. DISEASE: (0 = NOT TESTED, 1 = SUSCEPTIBLE, 2 = RESISTANT)

0 HALO BLIGHT 2 POWDERY MILDEW 0 SEPTORIA LEAF BLOTCH 2 SOIL-BORNE MOSIAC

0 HELMINTHOSPORIUM LEAF BLOTCH 0 YELLOW DWARF VIRUS (tolerant) 0 VICTORIA BLIGHT 0 OTHER (Specify)

SPECIFY RACES TESTED:

	RACES SUSCEPTIBLE	RACES RESISTANT
<input type="checkbox"/> 0 CROWN RUST		
<input type="checkbox"/> 0 STEM RUST		
<input type="checkbox"/> 0 COVERED SMUT		
<input type="checkbox"/> 0 LOOSE SMUT		

16. INDICATE VARIETY YOU BELIEVE MOST CLOSELY TO RESEMBLE THAT SUBMITTED:

CHARACTER	VARIETY	CHARACTER	VARIETY
PLANT TILLERING	Salem	LEAF COLOR	Salem
LEAF SIZE	Salem	LEAF CARRIAGE	Salem
SEED COLOR	Salem	SEED SHAPE	Firecracker

COMMENTS:

Table 4. Winter hardiness (percent survival) of N.C. 73-15 and selected check varieties

Variety	Waynesville						Rowan Co.				U.N. 1977	
	A.T. 1975	A.T. 1976	A.T. 1977	U.N. 1977	A.T. 1978	U.N. 1978	1977 A.T.	1977 U.N.	A.T.	1978 U.N.		
N.C. 73-15	25	8	1	0	0	0	0	28	25	65	83	76
Carolee	80	15	1	-	0	-	6	-	-	8	-	-
Salem	70	15	0	1	0	0	10	7	4	5	59	
Coker 227	80	55	1	0	0	0	21	24	68	83	63	
Coker 66-22	95	90	-	-	-	-	-	-	-	-	-	-
Firecracker	-	-	0	0	0	0	2	2	1	-	-	32

1/ Mean of 6 locations in 5 states

Table 5. Soil-borne mosaic (percent infection) on N.C. 73-15 and selected check varieties

Variety	Rowan Co.			Clayton					Clemson, S.C.	
	A.T. 1975	A.T. 1976	A.T. 1976	A.T. 1977	A.T. 1977	U.N. 1977	A.T. 1978	U.N. 1978	U.N. 1977	U.N. 1977
N.C. 73-15	60	55	50	85	45	35	35	35	20	20
Carolee	70	55	30	60	-	25	25	-	-	-
Salem	80	65	40	65	65	40	40	50	40	40
Coker 227	45	45	20	70	75	25	25	30	60	60
Coker 66-22	45	30	20	-	-	-	-	-	-	-
Firecracker	-	-	-	60	80	35	35	-	30	30

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Table 6. Miscellaneous agronomic notes on N.C. 73-15 and selected check varieties

Variety	<u>1/</u> Height in.	<u>2/</u> Lodging %	<u>3/</u> Heading Date after 1/1
N.C. 73-15	31.4	30	113.3
Carolee	-	-	-
Salem	30.3	6	115.0
Coker 227	28.9	25	112.7
Coker 66-22	-	-	-
Firecracker	30.4	0	116.7

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1/ Mean of 8 locations

2/ Mean of 2 locations

3/ Mean of 7 locations